

WHAT IS CLAIMED IS:

1. ~~A chip~~^{tip}, which comprises a structural element for separating nucleic acid from a sample liquid, the structural element comprising a silicon oxide material and having pores of larger pore sizes than the size of the silicon oxide material being provided in the liquid passage of the ~~chip~~^{tip}. ~~chip~~^{tip} B
2. A ~~chip~~^{tip} according to Claim 1, wherein the structural element is a porous body.
3. A ~~chip~~^{tip} according to Claim 1, wherein the silicon oxide particles for the structural element have particles sizes of 0.001 to 100 μm .
4. ~~A chip~~^{tip}, which comprises a structural element for separating nucleic acid from a sample liquid, the structural element being formed from composite particles comprising resin particles as nuclei and particles of silicon oxide deposited on the surfaces of the resin particles by three-dimensionally bonding the composite particles to one another, being provided in the passage for the sample liquid in the ~~chip~~^{tip}.
5. ~~A chip~~^{tip} according to Claim 4, wherein the resin particles have particle sizes of 50 to 1,000 μm .
6. ~~A chip~~^{tip}, which comprises a structural element for separating nucleic acid from a sample liquid, the structural element being formed from composite particles comprising nucleus particles and particles of silicon oxide deposited on the surfaces of nucleus particles by three-dimensionally bonding the composite particles to one

000000-000000

another.

7. A structural element for trapping nucleic acid from a sample liquid by passing the sample liquid there-through, which comprises particles of silicon oxide and has pores of larger pore sizes than particle sizes of the silicon oxide particles.

8. A structural element according to Claim 7, wherein the structural element is a porous body.

9. A process for forming a structural element for trapping nucleic acid from a sample liquid, which comprises: a step of mixing particles of silicon oxide, an organic material and a sol-gel solution containing a silicon compound and placing the mixture into a mold, a step of heat treating the mixture to polycondense the sol-gel solution, thereby obtaining the formed product, and taking out the formed product from the mold, and a step of heat treating the formed product to combust the organic material.

10. A process according to Claim 9, wherein the particles of silicon oxide have particle sizes of 0.001 to 100 μm .

11. A process according to Claim 9, wherein the organic material has particle sizes of 50 to 1,000 μm .

12. A process according to Claim 9, wherein the organic material is synthetic or natural fibers or in a string form made therefrom.

13. A process for forming a structural element for trapping nucleic acid from a sample liquid, which comprises

ⓑ

a step of mixing resin particles, particles of silicon oxide having smaller particle sizes than those of the resin particles and an organic solvent, and a step of placing the mixture into a mold, heat treating the mixture as in the mold at a temperature of welding the resin particles to one another, and then taking the welding product out of the mold.

14. A process according to Claim 13, wherein the silicon oxide particles have one-tenth as small as or smaller particle sizes than those of the resin particles.

15. A process according to Claim 13, wherein the resin particles are balloon particles.

16. A process for forming a structural element for trapping nucleic acid from a sample liquid, which comprises a step of dipping a porous material into a sol-gel solution containing a silicon compound and a step of taking the porous material out of the sol-gel solution, and heat treating the porous material to polycondense the sol-gel solution contained in the porous material.

17. A process for forming a structural element for trapping nucleic acid from a sample liquid, which comprises a step of forming composite particles by depositing particles of silicon oxide onto the surfaces of resin particles having larger particle sizes than those of the silicon oxide particles, a step of placing the composite particles into a mold and heat treating the composite particles as in the mold at a temperature of not less than the heat-resisting temperature of the resin particles,

③

thereby welding the resin particles to one another to form a structural element, a step of taking the structural element out of the mold and dipping the structural element into a sol-gel solution containing a silicon compound and a step of taking the structural element out of the sol-gel solution and heat treating the structural element to polycondense the sol-gel solution entrained in the structural element.

18. A process for forming a structural element for trapping nucleic acid from a sample liquid, which comprises a step of forming composite particles by depositing particles of silicon oxide onto the surfaces of resin particles having larger particle sizes than those of the silicon oxide particles, a step of mixing the composite particles with a sol-gel solution containing a silicon compound and placing the mixture into a mold, and a step of heat treating the mixture as in the mold to polycondense the sol-gel solution, thereby producing a formed product and taking the formed product out of the mold.

19. A process according to Claim 18, wherein the silicon oxide particles have particle sizes of 0.001 to 100 μm .

20. A process according to Claim 18, wherein the resin particles have particle sizes of 50 to 1,000 μm .

21. A process according to Claim 18, wherein the silicon oxide particles have one-tenth as small as or smaller particle sizes than those of the resin particles.

22
23
24

B